

LISTING OF CLAIMS

- 1 1. (Canceled)
- 1 2. (Currently amended) A method as recited in Claim 1 ~~21~~, wherein sending information to  
2 ~~the network device that causes the network device to receive all events~~ comprises the  
3 ~~steps of~~ subscribing the ~~network device~~ router to all the events that are in the mapping  
4 and associated with the ~~network device~~ router at an event gateway that is coupled to the  
5 event bus.
- 1 3. (Currently amended) A method as recited in Claim 1 ~~21~~, further comprising the steps of  
2 receiving application-specific mapping information from an application program and  
3 updating the mapping using the application-specific mapping information.
- 1 4. (Original) A method as recited in Claim 2, further comprising the steps of receiving  
2 application-specific mapping information from an application program in XML format  
3 using a data access component that transforms the application-specific mapping  
4 information from XML format into a canonical object model format.
- 1 5. (Canceled)
- 1 6. (Currently amended) A method as recited in Claim 1 ~~21~~, wherein sending information to  
2 ~~the network device that causes the network device to receive all events~~ comprises the  
3 ~~steps of~~ generating, based on the mapping, a list of all the events that are in the mapping  
4 and associated with the ~~network device~~ router, and sending the list to an event gateway  
5 that is coupled to the event bus.
- 1 7. (Currently amended) A method as recited in Claim 1 ~~21~~, wherein the mapping comprises  
2 an association of stored values that identify for each ~~network device~~ of the routers, an  
3 application, a group identifier, an event of the one or more events, a network device  
4 identifier, one or more published events, and one or more subscribed events.

1 8. (Canceled)

1 9. (Canceled)

1 10. (Canceled)

1 11. (Canceled)

1 12. (Canceled)

1 13. (Canceled)

1 14. (Canceled)

1 15. (Canceled)

1 16. (Canceled)

1 17. (Canceled)

1 18. (Currently amended) A method as recited in Claim ~~4~~ 21, wherein receiving the device  
2 identifier comprises receiving a publish request that includes a router identifier for one of  
3 the network devices in the logical group or a group identifier of the logical group, and an  
4 event identifier.

1 19. (Currently amended) A method as recited in Claim 18, wherein sending information to  
2 ~~the network device that causes the network device to receive all events that are associated~~  
3 ~~in the mapping with the logical group in which the network device participates ordering~~

comprises looking up the router identifier, or the group identifier, and the event identifier in the mapping and receiving a subject list in response thereto.

20. (Currently amended) A method as recited in Claim 18, wherein sending information to the network device that causes the network device to receive all events that are associated in the mapping with the logical group in which the network device participates ordering comprises looking up the router identifier, or the group identifier, and the event identifier in the mapping, receiving a subject list in response thereto, and applying the subject list to the network device router at the event gateway.

21. (Original) A method of automatically subscribing a router in a network to a plurality of events applicable to a logical group of which the router is a member, comprising the computer-implemented steps of:  
creating and storing a mapping that associates a plurality of routers with the logical group and that associates the logical group with one or more events that can pass over an event bus to which the router communicates;  
receiving a subscribe request from the router that includes a router identifier that uniquely identifies the router and an event identifier;  
looking up the router identifier and the event identifier in the mapping;  
receiving a subject list in response thereto, wherein the subject list identifies all subjects to which the router should subscribe;  
sending information to the event bus that requests the event bus to subscribe the router to all events in the subject list.

22. (Currently amended) A computer-readable medium carrying one or more sequences of instructions for automatically subscribing a network device router of a packet-switched network to a plurality of events applicable to a logical group of which the network device router is a member, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:  
creating and storing a mapping that associates a plurality of network devices routers with the logical group and that associates the logical group with one or more events

8           that can pass over an event bus to which the ~~network device~~ router is logically  
9           coupled;  
10       receiving a device identifier of one of the ~~network devices~~ routers in the logical group;  
11       receiving an event that is among the one or more events that are in the mapping;  
12       based on the mapping, sending information to the ~~network device~~ router that causes the  
13       ~~network device~~ router to receive all events that are associated in the mapping with  
14       the logical group in which the ~~network device~~ router participates.

1   23.   (Currently amended) An apparatus for automatically subscribing a ~~network device~~ router  
2       of a packet-switched network to a plurality of events applicable to a logical group of  
3       which the ~~network device~~ router is a member, comprising:  
4       means for creating and storing a mapping that associates a plurality of ~~network devices~~  
5       routers with the logical group and that associates the logical group with one or  
6       more events that can pass over an event bus to which the ~~network device~~ router is  
7       logically coupled;  
8       means for receiving a device identifier of one of the ~~network devices~~ routers in the  
9       logical group;  
10      means for receiving an event that is among the one or more events that are in the  
11      mapping;  
12      means for, based on the mapping, sending information to the ~~network device~~ router that  
13      causes the ~~network device~~ router to receive all events that are associated in the  
14      mapping with the logical group in which the ~~network device~~ router participates.

1   24.   (Currently amended) An apparatus for automatically subscribing a ~~network device~~ router  
2       to a plurality of events applicable to a logical group of which the ~~network device~~ router is  
3       a member, comprising:  
4       a network interface that is coupled to the data network for receiving one or more packet  
5       flows therefrom;  
6       a processor;  
7       one or more stored sequences of instructions which, when executed by the processor,  
8       cause the processor to carry out the steps of:

9 creating and storing a mapping that associates a plurality of ~~network devices~~  
10 routers with the logical group and that associates the logical group with  
11 one or more events that can pass over an event bus to which the ~~network~~  
12 ~~device-router~~ is logically coupled;  
13 receiving a device identifier of one of the ~~network devices~~ routers in the logical  
14 group;  
15 receiving an event that is among the one or more events that are in the mapping;  
16 based on the mapping, sending information to the ~~network device-router~~ that  
17 causes the ~~network device-router~~ to receive all events that are associated in  
18 the mapping with the logical group in which the ~~network device-router~~  
19 participates.

1 25. (Currently amended) The computer-readable medium recited in Claim 22, wherein  
2 sending information to the ~~network device-router~~ that causes the ~~network device-router~~ to  
3 receive all events comprises the steps of subscribing the ~~network device-router~~ to all the  
4 events that are in the mapping and associated with the ~~network device-router~~ at an event  
5 gateway that is coupled to the event bus.

1 26. (Previously presented) The computer-readable medium recited in Claim 22, wherein the  
2 method further comprises the steps of receiving application-specific mapping information  
3 from an application program and updating the mapping using the application-specific  
4 mapping information.

1 27. (Previously presented) The computer-readable medium recited in Claim 25, wherein the  
2 method further comprises the steps of receiving application-specific mapping information  
3 from an application program in XML format using a data access component that  
4 transforms the application-specific mapping information from XML format into a  
5 canonical object model format.

1 28. (Canceled)

1 29. (Currently amended) The computer-readable medium recited in Claim 22, wherein  
2 sending information to the ~~network device~~router that causes the ~~network device~~router to  
3 receive all events comprises the steps of generating, based on the mapping, a list of all the  
4 events that are in the mapping and associated with the ~~network device~~router, and sending  
5 the list to an event gateway that is coupled to the event bus.

1 30. (Currently amended) The method recited in Claim 22, wherein the mapping comprises an  
2 association of stored values that identify for each ~~network device~~router, an application, a  
3 group identifier, an event of the one or more events, a network device identifier, one or  
4 more published events, and one or more subscribed events.

1 31. (Canceled)

1 32. (Canceled)

1 33. (Canceled)

1 34. (Canceled)

1 35. (Canceled)

1 36. (Canceled)

1 37. (Canceled)

1 38. (Canceled)

1 39. (Canceled)

1 40. (Canceled)

1 41. (Currently amended) The computer-readable medium recited in Claim 22, wherein  
2 receiving the device identifier comprises receiving a publish request that includes a router  
3 identifier for one of the ~~network devices~~ routers in the logical group or a group identifier  
4 of the logical group, and an event identifier.

1 42. (Currently amended) The computer-readable medium recited in Claim 41, wherein  
2 sending information to the ~~network device~~ router that causes the ~~network device~~ router to  
3 receive all events that are associated in the mapping with the logical group in which the  
4 ~~network device~~ router participates ordering comprises looking up the router identifier, or  
5 the group identifier, and the event identifier in the mapping and receiving a subject list in  
6 response thereto.

1 43. (Currently amended) The computer-readable medium recited in Claim 41, wherein  
2 sending information to the ~~network device~~ router that causes the ~~network device~~ router to  
3 receive all events that are associated in the mapping with the logical group in which the  
4 ~~network device~~ router participates ordering comprises looking up the router identifier, or  
5 the group identifier, and the event identifier in the mapping, receiving a subject list in  
6 response thereto, and applying the subject list to the ~~network device~~ router at the event  
7 gateway.

1 44. (Currently amended) The apparatus recited in Claim 24, wherein sending information to  
2 the ~~network device~~ router that causes the ~~network device~~ router to receive all events  
3 comprises the steps of subscribing the ~~network device~~ router to all the events that are in  
4 the mapping and associated with the ~~network device~~ router at an event gateway that is  
5 coupled to the event bus.

1 45. (Previously presented) The apparatus recited in Claim 24, wherein the method further  
2 comprises the steps of receiving application-specific mapping information from an

3 application program and updating the mapping using the application-specific mapping  
4 information.

1 46. (Previously presented) The apparatus recited in Claim 44, wherein the method further  
2 comprises the steps of receiving application-specific mapping information from an  
3 application program in XML format using a data access component that transforms the  
4 application-specific mapping information from XML format into a canonical object  
5 model format.

1 47. (Canceled)

1 48. (Currently amended) The apparatus recited in Claim 24, wherein sending information to  
2 the ~~network device router~~ that causes the ~~network device router~~ to receive all events  
3 comprises the steps of generating, based on the mapping, a list of all the events that are in  
4 the mapping and associated with the ~~network device router~~, and sending the list to an  
5 event gateway that is coupled to the event bus.

1 49. (Currently amended) The apparatus recited in Claim 24, wherein the mapping comprises  
2 an association of stored values that identify for each ~~network device router~~, an application,  
3 a group identifier, an event of the one or more events, a ~~network device router~~ identifier,  
4 one or more published events, and one or more subscribed events.

1 50. (Canceled)

1 51. (Canceled)

1 52. (Canceled)

1 53. (Canceled)

1 54. (Canceled)



1 55. (Canceled)

1 56. (Canceled)

1 57. (Canceled)

1 58. (Canceled)

1 59. (Canceled)

1 60. (Currently amended) The apparatus recited in Claim 24, wherein receiving the ~~device~~  
2 router identifier comprises receiving a publish request that includes a router identifier for  
3 one of the ~~network devices~~ routers in the logical group or a group identifier of the logical  
4 group, and an event identifier.

1 61. (Currently amended) The apparatus recited in Claim 60, wherein sending information to  
2 the ~~network device~~ router that causes the ~~network device~~ router to receive all events that  
3 are associated in the mapping with the logical group in which the ~~network device~~ router  
4 participates ordering comprises looking up the router identifier, or the group identifier,  
5 and the event identifier in the mapping and receiving a subject list in response thereto.

1 62. (Currently amended) The apparatus recited in Claim 60, wherein sending information to  
2 the ~~network device~~ router that causes the ~~network device~~ router to receive all events that  
3 are associated in the mapping with the logical group in which the ~~network device~~ router  
4 participates ordering comprises looking up the router identifier, or the group identifier,  
5 and the event identifier in the mapping, receiving a subject list in response thereto, and  
6 applying the subject list to the ~~network device~~ router at the event gateway.

1 63. (Canceled)

1 64. (Currently amended) A computer-readable medium carrying a mapping service client  
2 Application Program Interface (API) comprising: instructions for a set of invokable  
3 operations that allow a client application ~~programs~~ program hosted in a router access to a  
4 mapping service runtime, wherein the invokable operations including at least  
5 an attach operation that allows the client to open a persistent connection to the mapping  
6 service runtime, the attach operation receives one parameter, having at least an  
7 application context that is used to determine a mechanism available to the client;  
8 a detach operation that tears down the persistent connection created by the attach  
9 operation;  
10 an open operation that creates one or more non-persistent channels within the connection  
11 that is created by the attach operation;  
12 a close operation that terminates the one or more non-persistent channels that are created  
13 by the open operation; and  
14 a resolve operation that returns to the client a set of events,  
15 wherein the set of events is a combination of zero or more publish events and zero or  
16 more subscribe events,  
17 wherein the combination included in the set of events returned by the resolve operation is  
18 based on a specified selection criteria, and  
19 wherein the selection criteria includes at least a device identification, an event subject,  
20 and an action desired; and  
21 wherein the mapping runtime service causes the client to receive all events that are  
22 associated with a logical group that includes the client, without the client having  
23 to store a list of the logical groups in which the client participates and without  
24 having to know what events pertain to the client or the logical groups.